Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_

A2&T: Direct and Inverse Variation

Do Now

Solve for all values of *x*: 

Direct Variation: When two variables *x* and *y* **vary** **directly**, it means…

 where *k* is a **constant value**. (The “constant of variation”)

*x* and *y* vary directly. When *x* is 7, *y* is 9. What is *x* when *y* is 27?

Since  always equals the **a constant value**, that means that *x* and

*y* have to increase and decrease \_\_\_\_\_\_\_\_\_\_\_\_\_\_ each other.

Inverse Variation: When two variables *x* and *y* **vary inversely**, it means…

where *k* is a **constant value**. (The “constant of variation”)

*x* varies inversely as *y*. When *x* is 9, *y* is 4. What is *x* when *y* is 2?

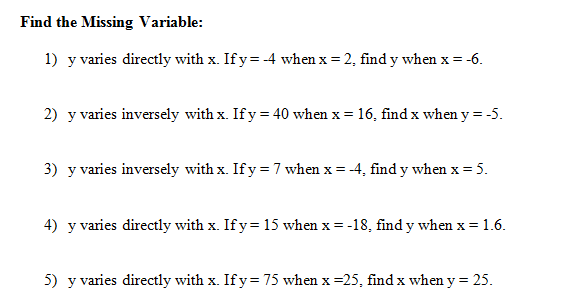
Since x times *y* always equals **a constant value**, that means that *x*

and *y* have to increase and decrease \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ each other.

\*\*Sometimes you won’t be told whether the values vary directly or inversely.

Do the values **increase/decrease together?** It’s **direct variation.**

Do the values **increase/decrease opposite to each other?** It’s **inverse variation**.



6) The number (b) of bolts a machine can make varies **directly** as the time (t) it operates. It can make 6578 bolts in 2 hours. How many bolts can it make in 5 hours?

7) The amount (a) that a family gives to charity varies **directly** as its income (i). Last year, the family earned $32,000 and gave $2560 to charity. How much will they give if they make $42,000 this year?

8) It takes 4 hours for 9 cooks to prepare a school lunch. How long would it take 8 cooks to prepare the lunch?

9) The current (I) in an electrical conductor varies inversely as the resistance (r) of the conductor. The current is 2 amperes when the resistance is 960 ohms. What is the current when the resistance is 480 ohms?

10) Explain the difference between direct and inverse variation. Give an example of each.